

WHAT IS CLAIMED IS

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1. A deviation compensation apparatus compensating for at least one of an amplitude deviation and a phase deviation occurring in signals during transmission thereof through N transmission paths, where N denotes a natural number larger than 1, comprising;

a compensating part compensating for deviations on M transmission paths of said N transmission paths, where M is a natural number and  $M < N$ ; and

a pre-deviation signal combining part combining signals on the N transmission paths before having the deviations applied thereto,

wherein said compensating part performs compensation for the deviations based on output of said pre-deviation signal combining part and the signals on the transmission paths to be compensated.

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2. The deviation compensation apparatus as claimed in claim 1, wherein:

said compensating part compensates for the deviations based on the output of said pre-deviation signal combining part, a combination of the signals on the transmission paths to be compensated and the signals on the transmission paths to be compensated after having the deviations applied thereto.

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3. A deviation compensation apparatus compensating for at least one of an amplitude deviation and a phase deviation occurring in signals during transmission thereof through N transmission paths, where N denotes a natural number larger than 1, comprising;

a compensating part compensating for deviations on M transmission paths of said N transmission paths, where M is a natural number and  $M < N$ ; and

a post-deviation signal combining part combining signals on the N transmission paths after having the deviations applied thereto,

wherein said compensating part performs compensation for the deviations based on output of said post-deviation signal combining part and the signals on the transmission paths to be compensated.

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4. The deviation compensation apparatus as claimed in claim 3, wherein:

said compensating part compensates for the deviations based on the output of said post-deviation signal combining part, a combination of the signals on the transmission paths to be compensated and the signals on the transmission paths to be compensated before having the deviations applied thereto.

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5. The deviation compensation apparatus as claimed in claim 1, further comprising:

a correction value calculating part

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calculates a correction value every predetermined interval for each transmission path,

wherein:

5       said correction value calculating part  
performs processing of calculating an average for a  
second predetermined interval of a product of an  
error signal of a difference between the output of  
said pre-deviation signal combining part and a  
10       combination of the signals on the transmission paths  
to be compensated and a signal on the respective  
transmission path to be compensated.

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6. The deviation compensation apparatus  
as claimed in claim 3, further comprising:

      a correction value calculating part  
calculates a correction value every predetermined  
20       interval for each transmission path,  
      wherein:  
      said correction value calculating part  
performs processing of calculating an average for a  
second predetermined interval of a product of an  
25       error signal of a difference between the output of  
said post-deviation signal combining part and a  
combination of the signals on the transmission paths  
to be compensated and a signal on the respective  
transmission path to be compensated.

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7. The deviation compensation apparatus  
35 as claimed in claim 1, further comprising:

      a first circuit of multiplying with an  
amplitude and a phase rotation, and a second circuit

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of performing a conversion reverse to that of said first circuit, for at least each transmission path to be compensated

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8. The deviation compensation apparatus as claimed in claim 3, further comprising:

10 a first circuit of multiplying with an amplitude and a phase rotation, and a second circuit of performing a conversion reverse to that of said first circuit, for at least each transmission path to be compensated

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9. The deviation compensation apparatus as claimed in claim 1, wherein said pre-deviation signal combining part applies weights in combining the signals such that the combination output may be maintained higher than a predetermined level.

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10. The deviation compensation apparatus as claimed in claim 3, wherein said post-deviation signal combining part applies weights in combining the signals such that the combination output may be maintained higher than a predetermined level.

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11. The deviation compensation apparatus

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as claimed in claim 7, wherein said first circuits apply the same weights as those applied in said pre-deviation signal combining part claimed in claim 9.

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12. The deviation compensation apparatus as claimed in claim 8, wherein said first circuits  
10 apply the same weights as those applied in said post-deviation signal combining part claimed in claim 10.

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13. The deviation compensation apparatus as claimed in claim 9, wherein the weights are set such that the phases of adjacent transmission paths  
20 may be equal.

14. The deviation compensation apparatus as claimed in claim 10, wherein the weights are set such that the phases of adjacent transmission paths  
25 may be equal.

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15. The deviation compensation apparatus as claimed in claim 1, wherein:  
35 said apparatus is used for radio communication employing a plurality of carrier frequencies; and

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said apparatus further comprises an amplifier covering a frequency band used by the radio communication, a circuit selecting each carrier frequency, and a frequency converting  
5 circuit converting each carrier frequency into a baseband frequency.

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16. The deviation compensation apparatus as claimed in claim 3, wherein:

said apparatus is used for radio communication employing a plurality of carrier  
15 frequencies; and

said apparatus further comprises an amplifier covering a frequency band used by the radio communication, a circuit selecting each carrier frequency, and a frequency converting  
20 circuit converting each carrier frequency into a baseband frequency.

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